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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,668	07/28/2003	Albrecht Dinkelaker	20236.8	4442

7590 03/30/2006

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EXAMINER
SANDERS, KRIELLION ANTIONETTE

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,668	DINKELAKER ET AL.	
	Examiner	Art Unit	
	Kriellion A. Sanders	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-20 and 22-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-20 and 22-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 1/17/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: References to blow molding in the claims.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-20 and 22-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification includes no reference to the present invention being blow moldable.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-20, 22-27, 31-36 and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kroll et al, US Patent No. 6432547 in view of Kauffman et al, US Patent No. 5169889.

The rejection is repeated for reasons of record. Kroll et al discloses compositions that may comprise a variety of crystalline and amorphous water-soluble and/or water dispersible polymers. The thermoplastic compositions of the invention may also employ a "conventional" thermoplastic polymer that is not breathable, water sensitive, nor biodegradable, provided the polymer is sufficiently diluted with plasticizers, waxes, and tackifying resins which contribute breathability. Such conventional thermoplastic polymers may be amorphous or crystalline. Representative examples of polymers include polylactic acid, polylactide, poly (hydroxybutyrate), poly (hydroxybutyrate/hydroxyvalerate), polycaprolactone, and others.

The thermoplastic composition of the invention preferably comprises a plasticizer as a diluent in an amount of up to about 90 wt-% and preferably in an amount ranging from about 10 wt-% to about 50 wt.

Compatible plasticizers include a variety of liquid plasticizers such as Carbowax 1000 from Union Carbide and Castor oil, also known as ricinus oil, which is a triglyceride (ester) of fatty acids derived from the seed of the castor plant. Approximately 90% of the fatty acid content is ricinoleic acid, an 18 carbon acid having a double bond in the 9-10 position and a hydroxyl group on the 12.sup.th carbon. The remainder of castor oil is made up of dihydroxystearic acid

(0.7%), palmitic acid (1%), stearic acid (1%), oleic acid (3%), linoleic acid (4.2%), linolenic acid (0.3%) and eicosanoic acid (0.3%). Castor oil is available in a variety of grades from several suppliers. The most preferred plasticizers for the invention are those that contain sufficient ether, hydroxyl, and/or polyol linkages to enhance the breathability of the formulation.

The breathable thermoplastic composition of the invention may further comprise a wax in an amount up to about 30 wt-%, more preferably at an amount ranging from about 3 wt-% to about 20 wt-%, and most preferably from about 5 wt-% to about 15 wt-%. Waxes are particularly useful for decreasing the surface tack of the barrier film layer. Waxes useful in the invention are preferably polar in nature. Polar waxes are those that contain at least one polar functional group such as hydroxyl, amide, sulfone, phosphate, sulfonamide, urethane, carboxylate acid, amine, and carbonate. The concentration of the functional group is present in an amount greater than about 2×10^{-3} equivalents per gram and preferably greater than 3.5×10^{-3} equivalents per gram. The molecular weight of waxes ranges from about 200 g/mole to about 1000 g/mole. Representative examples including 12-hydroxystearamide, N-(2-hydroxy ethyl 12-hydroxystearamide and N,N'ethylene bis 12-hydroxystearamide (PARICIN 220 and PARICIN 285 respectively, from CasChem, Bayonne, N.J.), stearamide (Kemamide S from Witco, Memphis, Tenn.), glycerin monostearate, sorbitan monostearate, and 12-hydroxy stearic acid. Also useful alone or in combination with the above are less polar waxes such as N,N'-ethylene-bis stearamide (Kemamide W-40 from Witco), linear aliphatic long chain alcohols (Unilin 425 from Petrolite, Tulsa, Okla.), hydrogenated castor oil (castor wax), oxidized synthetic waxes, and functionalized waxes such as oxidized homopolymers and oxidized polyethylene waxes (Petrolite E-1040). The inventors found that polar waxes having a melt point greater than

70.degree. C., preferably greater than about 110.degree C. and more preferably about 140.degree. C. or greater, are particularly advantageous.

A variety of other polymers, tackifiers and additives such as antioxidants (Irganox 1010), pigments and fillers, particularly hydrophilic fillers such as starch or cellulose esters and acetates, may be employed in an amount up to about 10 wt-% provided such materials do not detract from the humidity resistance, blocking resistance and speed of moistenability contributed by the blend of crystalline water sensitive polymer with amorphous water sensitive polymer.

See col. 2, line 25 through col. 9, line 15. Example 56 indicates that the components are combined in a molten state.

Since the compositions of the invention are used to formulate films, it is clear that they may be extruded using conventional devices and may be employed as packaging materials. This is further documented in the disclosure of Kauffman et al., described below.

Kauffman et al discloses hot melt adhesive compositions suitable for a variety of applications, obtained from polyhydroxy-butyrate/hydroxy valerate (PHBV) copolymers, tackifiers, and optionally, waxes and/or plasticizers. The adhesives may be formulated using conventional additives and may be formulated into pressure sensitive or non-pressure sensitive adhesives depending upon the desired application. The patented invention is directed to hot melt adhesive compositions comprising 20 to 90% by weight of a linear polyester of 3-hydroxybutyric and 3-hydroxyvaleric acids containing 9 to 35% of the hydroxyvalerate component; 10 to 80% by weight of a polar tackifier having a Ring and Ball softening point (as described by ASTM E-26) greater than about 60.degree. C.; 0 to 50% by weight of a plasticizer; 0 to 30% by weight of

a wax diluent and 0-3% by weight of a stabilizer.

Patentee indicates that the general formulations of the invention may be adapted to include a wide variety of hot melt adhesive compositions, which may vary depending upon the specific end use, the knowledge of which is readily available to those skilled in the particular art.

In general, non-pressure sensitive adhesives can be prepared using 20-90% by weight of the polyhydroxy-butyrate/hydroxyvalerate copolymer containing 9 to 35% of the hydroxyvalerate component, 10-80% tackifying resin, 0-30% of a wax-like diluent, 0-30% plasticizer and 0 to 3% of a stabilizer. Preferred non-pressure sensitive adhesives are prepared using 50-80% of a copolymer containing 24% of the hydroxyvalerate component; 10-40% tackifying resin, preferably terpene-phenolic resins or rosin derivatives; 0-25% of a plasticizer, preferably the phenyl ether of polyethylene glycol or the methyl ester of hydrogenated wood rosin; 0-20% of a wax-like diluent, preferably hydrogenated castor oil (also known as castor wax) or 12-hydroxystearamide. These hot melt adhesive compositions may be formulated using techniques known in the art. An exemplary procedure involves placing approximately 40% of the total tackifying resin concentration with all the polyhydroxybutyrate/hydroxyvalerate copolymer, wax, plasticizers and stabilizers in a jacketed mixing kettle, preferably in a jacketed heavy duty mixer, which is equipped with rotors and thereupon raising the temperature to a range of from up to about 190.degree. C. After the resin has melted, the temperature is lowered to 150.degree. to 165 degree. C. Mixing and heating are continued until a smooth, homogeneous mass is obtained whereupon the remainder of the tackifying resin is thoroughly and uniformly admixed therewith.

The adhesive may also contain less than about 20% by weight of certain thermoplastic polymers such as ethylene vinyl and polycaprolactone polymers. These polymers are employed in order to impart flexibility, toughness and strength.

The wax is selected from the group consisting of hydroxy stearamide wax, hydrogenated castor oil, oxidized synthetic waxes, polyethylene oxide having a weight average including weight above about 1000 and functionalized synthetic waxes. Optional additives may be incorporated into the hot melt compositions in order to modify certain properties thereof. Among these additives may be included colorants such as titanium dioxide; and fillers such as talc and clay, etc

The adhesives disclosed therein may be employed in a wide variety of uses as are known in the art. The adhesives described therein may be effectively utilized in a variety of packaging and carton sealing applications. See col. 1, line 51 through col. 4, line 65.

The patents to Kroll et al and Kauffman et al document that the polymer and wax components of applicant's invention are commonly employed by melt mixing in a single composition in a ratio of 5-95:95-5 and that the resulting compositions are formulated into packaging materials. Applicant's invention is obvious there over.

Response to Arguments

1. Applicant's arguments filed 1/17/2006 have been fully considered but they are not persuasive. At page 10 of the remarks filed 1/17/06, applicant argues that the Kroll et al patent requires duropastic component (e.g. component b) of claim 1) and that duroplastic component would preclude the patented compositions from being blow-molded as is required in the newly amended claims. This argument is not understood in that the Kroll et al does not reference a

duroplastic in claim 1. Furthermore there is no clear teaching in Kroll et al that the compositions can not be blow-molded. Applicant concedes that the Kroll et al compositions discloses the components recited in former claim 17, it is therefor obvious to formulate a composition comprising these components as based upon the disclosure of Kroll et al.

2. Applicant further states at page 11 of the remarks filed 1/17/06, that Kaufman et al requires the addition of 3-hydroxy butyric or 3-hydroxyvaleric acids. Applicant further concedes that the presence of these acids in the Kaufman et al invention is unclear as to its effect on the ability of the patented invention to be blow molded.

Conclusion

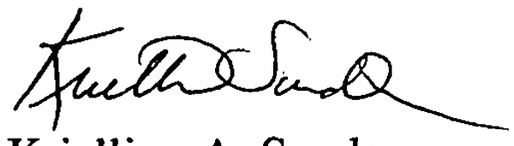
3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kriellion A. Sanders
Primary Examiner
Art Unit 1714

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